

Title (en)

DUAL SPRING EXPANDER FOR OIL CONTROL PISTON RINGS.

Title (de)

DOPPELFEDERAUSDEHNVORRICHTUNG FÜR ÖLREGELUNGSKOLBENRINGE.

Title (fr)

EXPANSEUR ELASTIQUE DOUBLE POUR SEGMENTS DE PISTON DE COMMANDE D E L'HUILE.

Publication

**EP 0218607 A4 19870709 (EN)**

Application

**EP 86901694 A 19860220**

Priority

US 70821685 A 19850305

Abstract (en)

[origin: US4579351A] A spring expander for oil control piston rings incorporates two spring mechanisms. One spring mechanism produces circumferentially directed hoop stress in the expander body when the expander body itself is contracted. A second radially acting spring mechanism is provided by circumferentially spaced spring fingers which radially deflect. Because the two spring mechanisms act together, the expander has a combined spring rate which is lower than the spring rate of either the circumferential spring mechanism or the spring rate of the radial spring mechanism. The expander also has expansion stops which limit the radial expansion of the spring fingers, and thereby limit the expansion of the associated rail ring to reduce pop-out during assembly. Contraction stops limit radial contraction of the rail ring with respect to the expander and maintain a clearance between the expander and the cylinder wall.

IPC 1-7

**F16J 9/06**

IPC 8 full level

**F02F 5/00** (2006.01); **F16J 9/06** (2006.01)

CPC (source: EP KR US)

**F16J 9/06** (2013.01 - KR); **F16J 9/066** (2013.01 - EP US)

Citation (search report)

- No relevant documents have been disclosed.
- See references of WO 8605250A1

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

**US 4579351 A 19860401**; AU 5378886 A 19860925; AU 559019 B2 19870219; BR 8605696 A 19870811; CA 1262744 A 19891107; EP 0218607 A1 19870422; EP 0218607 A4 19870709; JP H0514143 B2 19930224; JP S61223371 A 19861003; KR 870700132 A 19870314; WO 8605250 A1 19860912

DOCDB simple family (application)

**US 70821685 A 19850305**; AU 5378886 A 19860220; BR 8605696 A 19860220; CA 503223 A 19860304; EP 86901694 A 19860220; JP 4819886 A 19860305; KR 860700763 A 19861104; US 8600396 W 19860220